

## **ABSTRACT**

The present invention is directed to a system for aligning optical fibers inserted into a faceplate hole or cavity in a fiber optic array. A plurality of flexible protrusions may be included, which extend inwardly from the inner perimeter of the cavity to contact the optical fiber as it is inserted into the cavity. The protrusions are substantially uniformly deformed by the insertion of the optical fiber into the cavity to align the optical fiber therein. In the preferred embodiment, the protrusions are three equally distant flanges extending the length of the cavity, which are tapered in relation to each other such that the spacing of the flanges at the faceplate is nominally small than the outside diameter of the optical fiber. The present invention also includes a method for producing the alignment device, which includes applying a mask to a substrate, where the mask is shaped as having a plurality of protrusions extending inwardly from an inner perimeter of a cavity; and etching the substrate to create a plurality of protrusions extending inwardly from an inner perimeter of a cavity in the substrate, wherein the protrusions in the cavity are sized to substantially uniformly to form to align the optical fiber when inserted into the cavity. The etching may be accomplished using a number of processes, such as RIE and photolithography.